

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

DRAFT

Conditional Major, Operating

Permit: F-07-050

Samaritan Hospital

Lexington, KY 40508

September 19, 2007

Lisa Beckham, Reviewer

SOURCE ID: 21-067-00096

AGENCY INTEREST: 1054

ACTIVITY: APE20070001

SOURCE DESCRIPTION:

An application for an initial conditional major permit was received from the University of Kentucky for the purchase of the Samaritan Hospital on July 16, 2007, with supplemental information July 18, 2007 and September 12, 2007 respectively. Samaritan Hospital is a general medical and surgical hospital in Lexington, Kentucky. The facility has been operating existing units on the permit O-84-110, issued in May 1984. Internal audit of the facility indicate that the currently have three indirect heat exchangers rated at 20.9 MMBtu/hr, 12 MMBtu/hr, and 12 MMBtu/hr, and three emergency diesel generators rated at 235 kW, 385 kW, and 275 kW. The indirect heat exchangers burn natural gas and diesel fuel, and the potential emissions of sulfur dioxide exceed the major source threshold. The facility has proposed emission and operating limits to preclude the applicability of Title V [401 KAR 52:020] permitting requirements. Additionally, this permit limits source-wide fuel oil usage to 2,292,000 gallons per year, and the sulfur content of fuel oil shall not exceed 0.5 percent by weight. Emissions calculations were generated based on emission factors from AP-42.

EMISSION UNITS:

Emission Unit 01

20.9 MMBtu/hr Indirect Heat Exchanger

Primary Fuel: Natural Gas

Secondary Fuel: No. 2 Fuel oil

Construction commenced: 1969

Emission Units 02 and 03

Two 12 MMBtu/hr Indirect Heat Exchangers

Primary Fuel: Natural Gas

Secondary Fuel: No. 2 fuel oil

Construction Commenced: 2006

Emission Unit 04

235 kW Detroit Diesel Emergency Generator

Construction Commenced: 1971

385kW Detroit Diesel Emergency Generator

Construction Commenced: 1971

275kW Cummins Diesel Emergency Generator

Construction Commenced: 1983

APPLICABLE REGULATIONS:

401 KAR 61:015, existing indirect heat exchangers, applicable to emission units with a rated capacity less than 250 MMBtu/hr which commenced before April 9, 1972. Applies to Emission Unit 01

401 KAR 59:015, new indirect heat exchangers, applicable to an emissions unit with a capacity of less than 250 MMBtu/hr which commenced on or after April 9, 1972. Applies to Emission Units 02 and 03.

401 KAR 60:005, incorporating by reference 40 CFR 60, Subpart Dc, Standards of performance for small industrial-commercial-institutional steam generating units, applies to each steam generating unit commenced after June 8, 1989 that has a maximum design heat input capacity between 10 and 100 MMBtu/hr. Applies to Emission Units 02 and 03.

EMISSION AND OPERATING CAPS DESCRIPTION:

Emission Unit 01:

Pursuant to 401 KAR 61:015, Section 4(1), particulate emissions shall not exceed 0.63 lbs/MMBtu based on a three-hour average.

Pursuant to 401 KAR 61:015, Section 4(3)(b), visible emissions shall not exceed forty (40) percent opacity based on a six-minute average except that a maximum of sixty (60) percent opacity shall be permissible for not more than six (6) consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot.

Pursuant to 401 KAR 61:015, Section 4(3)(c), emissions shall not exceed twenty (40) percent opacity based on a six-minute average except during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

Pursuant to 401 KAR 60:015, Section 5(1), sulfur dioxide emissions shall not exceed 5.43 lbs/MMBtu based on a twenty-four hour average

Emission Units 02 and 03:

Pursuant to 401 KAR 59:015, Section 4(1)(c), particulate emissions from each unit's stack shall not exceed 0.39 lb/MMBtu based on a three-hour-average.

Pursuant to 401 KAR 59:015, Section 4(2), emissions shall not exceed twenty (20) percent opacity based on a six-minute average, except for:

1. a maximum of forty (40) percent opacity shall be permissible for not more than 6

consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot and

2. emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

Pursuant to 40 CFR 60.42c, sulfur dioxide emissions from each unit's stack shall not exceed 0.50 lb/MMBtu; as an alternative, the permittee shall not combust oil that contains greater than 0.5 weight percent sulfur.

Emission Unit 04:

There are no specific applicable regulations to the units other than the general requirements under 401 KAR 52:030. Additionally they are not subject to 40 CFR 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. 40 CFR 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (HAP) for Stationary Reciprocating Internal Combustion Engines is also not applicable because the source wide HAP emissions are not major.

SOURCE-WIDE EMISSION AND OPERATING CAPS DESCRIPTION:

To preclude the applicability of 401 KAR 52:020, source-wide emissions of sulfur dioxide shall not exceed 90 tons per year based on a twelve-month rolling total, and fuel oil shall not exceed 2,292,000 gallons per year based on a twelve-month rolling total. The sulfur content of fuel oil shall not exceed 0.5 percent by weight. Operating hours for each diesel generator unit shall not exceed 500 hours per year based on a twelve-month rolling total.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.